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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LU, TOM Y	

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/672,382	CORTOPASSI ET AL.	
	Examiner	Art Unit	
	Tom Y. Lu	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-23,29-35,37,39-41,48 and 49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-23, 29-35, 37, 39-41 and 48-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment and written response filed 11/30/2007 has been entered and considered.

2. Claims 1-17, 24-28, 36, 38 and 42-47 have been cancelled.

3. Claims 48-49 have been added.

4. Claims 18, 29, 35 and 39 have been amended.

5. Claims 18-23, 29-35, 37, 39-41 and 48-49 are pending.

Response to Arguments

6. Applicant's arguments filed 11/30/2007 have been fully considered but they are not persuasive.

Claims 18 and 29:

Applicant argues "in the method disclosed by Thornberg, the user does not have discretion as to the type of object display attribute displayed. In contrast, as described in applicant's specification, 'pressure can be used to differentiate a number of different display attributes in addition to object thickness, such as object fading, shading and dotted or dashed graphics.'" In conclusion, applicant argues Thornberg fails to teach "a user-selectable object display". Upon further review of specification, and in light of applicant's arguments, the examiner respectfully disagrees as follows: Thornburg at column 4, lines 9-21, discloses an A/D converter outputs in the range of "0-50" would dictate a fine line, and "over 250" would dictate a width line. Appropriately set transition points therebetween would dictate intermediate line width. Therefore, "0-50" in Thornburg corresponds to the claimed "first range", "51-249" corresponds to the claimed "second range", "over 250" would be another range, although it is not

mentioned in applicant's system. The width of a line corresponds to the claimed "display attribute". The examiner notes the ranges in the converter to output are *determined/selected* in accordance to the user's preference to the line width, hence the line width, the claimed "object display attribute", are user-selectable. For example, the user selects pressure range 0-50 to be one line width. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "pressure can be used to differentiate a number of different display attributes in addition to object thickness, such as object fading, shading and dotted or dashed graphics.") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. Applicant's arguments, see Remarks, filed 11/30/2007, with respect to the rejections of claims 35 and 39 under 35 U.S.C. 102(b) and 103(a) respectively have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Futatsugi et al (U.S. Patent No. 5,533,141) and Wirtz (U.S. Patent No. 5,730,468).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 18-23 and 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thornburg et al ("Thornburg" hereafter) (U.S. Patent No. 4,318,096) in view of Sites (U.S. Patent No. 6,408,092 B1).

a. As per claim 18, Thornburg discloses a method of recognizing handwriting-based data entry (column 2, line 62) comprising: a) accessing spatial stroke data and pressure data, and representing said user-drawn stroke wherein respective pressure data is associated with respective spatial data (Thornburg at column 4, lines 32-38, and 47-56, teaches a graphic input pen 10 with its associated X-Y coordinate tablet 12 and their relationship to a general purpose display processor 12. Note the general purpose display processor gains the output from an A/D converter 50 through main data transfer bus, which at line 47-56, explains such A/D converter outputs an 8-bit signal that enables the identification of 256 states of pen pressure. The A/D converter 50 in Thornburg corresponds to the claimed "digitizer". 256 states of pen pressure correspond to the claimed "pressure data", X-Y coordinates correspond to the claimed "spatial data"); b) storing said spatial stroke data and pressure data into a computer memory wherein pressure data of a first range represents an object of a first display attribute and pressure data of a second range represents an object of a second display attribute (Thornburg at column 4, lines 9-21, discloses an A/D converter outputs in the range of "0-50" would dictate a fine line, and "over 250" would dictate a width line. Appropriately set transition points therebetween would dictate intermediate line width. Therefore, "0-50" in Thornburg corresponds to the claimed "first range",

"51-249" corresponds to the claimed "second range", "over 250" would be another range, even though it is not mentioned in applicant's system. However, it is inherently understood that it can be another range as a user desires. The width of a line corresponds to the claimed "display attribute". In addition, Thornburg discloses storing spatial data and pressure data in memory 56 at column 4, lines 47-50); c) determining a user-selectable object display attribute based on said pressure data (The examiner notes the pressure ranges in the converter to output are *determined/selected* in accordance to the user's preference to the line width, hence the line width, the claimed "object display attribute", are user-selectable. E.g. the user selects pressure range 0-50 to be one line width); d) drawing a representation of said user-drawn stroke on a display screen of said computer system simultaneously with said spatial stroke data, wherein said representation of said user-drawn stroke is drawn with said object display attribute as determined at said step (Thornburg at column 4, lines 47-56, tablet 12, and A/D converter 50, and display processor are all connected through 54, which the data is being shared simultaneously. It allows the system to draw a representation of user-drawn stroke on a display screen of computer system simultaneously with spatial stroke data being accessed by digitizer wherein representation of user-drawn stroke is drawn with object display attribute as determined); and e) repeating steps a) - d) until said stroke is complete (it is inherent to repeat steps a) – d) until stroke is complete). However, Thornburg teaches the digitizer is built-in to the pen, not incorporated in a computer system as claimed. Sites teaches a PDA device 100,

which includes a display tablet for handwritten input 104 and 106, (see column 3, lines 35 and 48) and such display tablet acts as the claimed "digitizer" that captures the pressure data of the input strokes, see column 1, lines 9-14. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to capture pressure data using a graphic tablet as taught by Sites because pressure data captured by a digitizer in a tablet device is functionally equivalent to which captured by a digitizer in a graphic pen since both digitizers capture the pressure data of the stroke and digitize the data into 256 levels, see column 4, lines 55-56 in Thornburg and column 1, lines 16-18 in Sites, and by using a the tablet device as taught in Sites, the user can use any ordinary stylus/pen to input the stroke information without limiting to a specially made graphic pen.

b. As per claim 19, the combination of Thornburg and Sites discloses first display attribute is a first width and wherein said second display attribute is a second width (Thornburg: column 4, lines 14-16).

c. As per claim 20, the combination of Thornburg and Sites discloses wherein stroke is a line (Thornburg: column 4, lines 14-16).

d. As per claim 21, the combination of Thornburg and Sites discloses wherein said computer system is a palm size computer system (Sites: column 3, line 35)

e. As per claim 22, the combination of Thornburg and Sites discloses wherein said computer system is a portable computer (Sites: column 3, line 35).

f. As per claim 23, the combination of Thornburg and Sites discloses wherein said digitizer is separate in area from said display screen (Sites: see figure 1 and column 4, lines 59-65, the digitizer regions 104 and 106 are different from reviewing area 102).

g. As per claim 29, Thornburg discloses a secure handwriting-based (column 2, line 62) data entry recognition system (see system in figure 7) comprising: a) means for accessing spatial stroke data and pressure data, and representing said user-drawn stroke wherein respective pressure data is associated with respective spatial data (Thornburg at column 4, lines 32-38, and 47-56, teaches a graphic input pen 10 with its associated X-Y coordinate tablet 12 and their relationship to a general purpose display processor 12. Note the general purpose display processor gains the output from an A/D converter 50 through main data transfer bus, which at line 47-56, explains such A/D converter outputs an 8-bit signal that enables the identification of 256 states of pen pressure. The A/D converter in Thornburg corresponds to the claimed "digitizer". 256 states of pen pressure correspond to the claimed "pressure data", X-Y coordinates correspond to the claimed "spatial data"); b) means for storing said spatial stroke data and pressure data into a computer memory wherein pressure data of a first range represents an object of a first display attribute and pressure data of a second range represents an object of a second display attribute (Thornburg at column 4, lines 9-21, discloses an A/D converter outputs in the range of "0-50" would dictate a fine line, and "over 250" would dictate a width line. Appropriately set transition points therebetween would

dictate intermediate line width. Therefore, "0-50" in Thornburg corresponds to the claimed "first range", "51-249" corresponds to the claimed "second range", "over 250" would be another range, even though it is not mentioned in applicant's system. However, it is inherently understood that it can be another range as a user desires. The width of a line corresponds to the claimed "display attribute". In addition, Thornburg discloses storing spatial data and pressure data in memory 56 at column 4, lines 47-50); c) means for determining (display processor 12) a user-selectable object display attribute based on said pressure data (Thornburg shows using 256 states of pressure data to determine the width of a line); d) means for drawing a representation of said user-drawn stroke on a display screen of said computer system simultaneously with said spatial stroke data, wherein said representation of said user-drawn stroke is drawn with said object display attribute as determined at said step (Thornburg at column 4, lines 47-56, tablet 12, and A/D converter 50, and display processor are all connected through 54, which the data is being shared simultaneously. It allows the system to draw a representation of user-drawn stroke on a display screen of computer system simultaneously with spatial stroke data being accessed by digitizer wherein representation of user-drawn stroke is drawn with object display attribute as determined); and e) repeating steps a) - d) until said stroke is complete (it is inherent to repeat steps a) – d) until stroke is complete). However, Thornburg teaches the digitizer is built-in to the pen, not incorporated in a computer system as claimed. Sites teaches a PDA device 100, which includes a display tablet for

handwritten input 104 and 106, (see column 3, lines 35 and 48) and such display tablet acts as the claimed "digitizer" that captures the pressure data of the input strokes, see column 1, lines 9-14. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to capture pressure data using a graphic tablet as taught by Sites because pressure data captured by a digitizer in a tablet device is functionally equivalent to which captured by a digitizer in a graphic pen since both digitizers capture the pressure data of the stroke and digitize the data into 256 levels, see column 4, lines 55-56 in Thornburg and column 1, lines 16-18 in Sites, and by using a the tablet device as taught in Sites, the user can use any ordinary stylus/pen to input the stroke information without limiting to a specially made graphic pen..

h. As per claim 30, the combination of Thornburg and Sites discloses first display attribute is a first width and wherein said second display attribute is a second width (Thornburg: column 4, lines 14-16).

i. As per claim 31, the combination of Thornburg and Sites discloses wherein stroke is a line (Thornburg: column 4, lines 14-16).

j. As per claim 32, the combination of Thornburg and Sites discloses wherein said computer system is a palm size computer system (Sites: column 3, line 35)

k. As per claim 33, the combination of Thornburg and Sites discloses wherein said computer system is a portable computer (Sites: column 3, line 35).

l. As per claim 34, the combination of Thornburg and Sites discloses wherein said digitizer is separate in area from said display screen (Sites: see figure 1 and

column 4, lines 59-65, the digitizer regions 104 and 106 are different from reviewing area 102).

9. Claims 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futatsugi et al ("Futatsugi" hereafter) (U.S. Patent No. 5,533,141) in view of Wirtz (U.S. Patent no. 5,730,468)

a. As per claim 35, Futatsugi discloses a method of recognizing shape entry (Futatsugi teaches a portable computer system which is based on a method of recognizing the character strokes as shown in figure 9, column 7, lines 35-38), said method comprising the steps of: accessing spatial stroke data and pressure data captured by a digitizer wherein respective pressure data is associated with respective spatial stroke data (column 6, lines 40-44, the spatial positions of the strokes like the kanji character shown in figure 9 are inputted from the tablet device 102, and the pressure data is also received in association with each stroke, see figures 10 and 11. The examiner notes the tablet device contains the claimed "digitizer", see column 5, lines 9-24); storing said spatial stroke data and pressure data into a computer memory (the stroke positions and their respective writing pressure data are stored in first memory 602 for interpretation by penmanship interpreter 605); performing shape recognition on said spatial data and said pressure data to identify a recognized shape with a shape set (penmanship interpreter 605 identifies the input stroke position data and its writing pressure in accordance with the dictionary 607, which includes a shape set, see figures 10 and 11. For details, see column 6, lines 38-67 and column 7, lines 1-12); and

displaying said recognized shape on a display screen of a computer system (column 7, lines 9-16, the interpreted data, recognized stroke data, is sent to an application, such as a word processing application, and the word processing application displays the recognized stroke data on a computer display screen). Futatsugi does not teach building a set of vectors from the spatial stroke data and associated pressure; performing shape recognition by applying a mathematical model to the set of vector to identify a recognized shape with a shape set. Wirtz teaches a dynamic time warping technique that includes a complex function of time as the claimed "set of vectors from the spatial stroke data and associated pressure data" (Wirtz: column 5, lines 15-25 and column 6, line 1); performing shape recognition (Wirtz: column 6, line 2, verification) by applying a mathematical model (Wirtz: column 5, line 49, comparison process is a mathematical model) to the set of vectors to identify a recognized shape (Wirtz: column 5, line 32, character string) with a shape set (Wirtz: column 5, line 45, reference character strings). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify Futatsugi's system with Wirtz's dynamic time warping technique because Wirtz's dynamic time warping technique has the advantage that as a result the distortion function describes the similarity of the form, as well as that of the dynamic, of the selected signal to the reference (Wirtz: column 2, lines 15-17). Two references are combinable because they are from the same field of endeavor, i.e. signature verification system.

b. As per claim 36, Futatsugi discloses wherein said shape set includes a square (column 1, lines 42-43, the examiner notes Futatsugi uses Japanese kanji as an input language, but other languages, such as English, are also applicable, and the English letters are shown in figure 12. If the English letters were used, the dictionary 607 would include alphabetic letters as stroke data. And one of the letters is "assumed" to be a square as would in applicant's application, see applicant's drawing figures 10-12, where applicant claims one of the alphabet shape is a square. Also see rejection paragraph 3.a).

c. As per claim 37, Futatsugi discloses wherein said shape set includes a circle (If the language is English, alphabets would be included in the dictionary 607, and letter "O" is a circle).

m. As per claim 38, see explanation in claim 36.

n. As per claim 48, Wirtz discloses wherein the mathematical model includes a neural network (a comparison process is a neural network).

o. As per claim 49, Wirtz discloses wherein the neural network is a radial basis function network (see figures 3 and 4 for comparison between a character string and a reference character string).

10. Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Von Ehr, II et al ("Von Ehr" hereafter) (U.S. Patent No. 5,434,959) in view of Futatsugi et al ("Futatsugi" hereafter) (U.S. Patent No. 5,724,985) and Wirtz (U.S. Patent No. 5,730,468).

a. As per claim 39, Von Ehr discloses a method of recognizing entry of an object (a line image 20, see figure 1) in a graphics application ("Frontographer" software,

column 3, line 66-67) resident on a computer (system 10, column 4, line 3), said method comprising the steps of: accessing spatial stroke data (stroke 20 and its spatial points as shown in figure 7) and pressure data captured by a digitizer (column 4, line 20, pressure sensitive tablet 15 is the claimed "digitizer") of a computer system; storing said spatial stroke data and pressure data into a computer memory (memory array, column 8, line 21); determining an object display attribute (line width) according to said pressure data (column 4, lines 27-29); drawing a representation of said object on a display screen of said computer (see figures 1 and 2, the line image is drawn and displayed on the display 11). However, Von Ehr does not explicitly teach the computer is a portable computer, which includes a digitizer for sensing the pressure data and a display for displaying the graphical information. Futatsugi teaches a tablet computer system 101, column 4, line 9, which includes a tablet device 102 that functions as a digitizer and a display, column 4, lines 7-8, and such tablet device is capable of measuring the pressure data, column 5, lines 9-10. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to practice Von Ehr's invention in Futatsugi's system because Von Ehr teaches his invention can be practiced in any structural forms, see figure 3, lines 20-27, and Futatsugi provides such structure in a portable tablet form, and such tablet computer provides easy utilities to users, column 2, lines 55-56. Neither Von Her nor Futatsugi teaches building a set of vectors from the spatial stroke data and associated pressure; Wirtz teaches a dynamic time warping technique that

includes a complex function of time as the claimed "set of vectors from the spatial stroke data and associated pressure data" (Wirtz: column 5, lines 15-25 and column 6, line 1); At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify Von Ehr and Futatsugi's system with Wirtz's dynamic time warping technique because Wirtz's dynamic time warping technique has the advantage that as a result the distortion function describes the similarity of the form, as well as that of the dynamic, of the selected signal to the reference (Wirtz: column 2, lines 15-17). Futatsugi and Wirtz references are combinable because they are from the same field of endeavor, i.e. signature verification system.

b. As per claim 40, the combination of Von Ehr and Futatsugi teaches the object is a line (see Von Ehr in figure 1).

c. As per claim 41, the combination of Von Ehr and Futatsugi teaches wherein pressure data of a first range represent an object of a first display attribute and pressure data of a second range represent an object of a second display attribute (column 9, lines 60-67 and column 10, lines 1-43, one range of width is a range that is less than a minimum threshold; another range of width is a range between the minimum threshold and the maximum threshold; and another range of width can be a range greater than the maximum threshold).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. **Examiner note:** Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teaching for the art and are applied to the specific limitations within the individual claim, other passages and figures may be applied as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirely as potential teaching all or part of the claimed invention, as well as the context of the a passage as taught by the prior art or disclosed by the examiner.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y. Lu whose telephone number is (571) 272-7393. The examiner can normally be reached on 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571)-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tom Y. Lu/
Art Unit 2624 .